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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,878	10/12/2001	Isamu Hotta	040302-0278	7600

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EXAMINER

TRAN, DIEM T

ART UNIT PAPER NUMBER

3748

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/974,878

Applicant(s)

HOTTA ET AL.

Examiner

Diem Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the Request for Reconsideration filed on 10/3/05.

Overall, claims 1-12 are pending in this application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, the scope of the recitation “a water trap disposed upstream of and close to the CO oxidation catalyst so dimensioned that adsorption heat and condensation heat of water contribute to a rise in temperature of the CO oxidation catalyst” is indefinite in that, any condensation process would heat the exhaust gas stream, this is an inherent function of the condensation process. At what point in a system would applicant consider the condensation of the water to contribute to a rise for temperature? How would a potential infringer know if his system would infringe these claims? Accordingly, the metes and bounds of these claims are not discernable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Frost et al. (US Patent 5,776,417).

Regarding claims 1-4, 7, 9, Frost discloses an exhaust emission control device of an internal combustion engine, comprising:

a water trap disposed upstream of and close to a low temperature light-off CO oxidation catalyst (see col. 2, lines 21-30), the water trap being supported separately from the CO oxidation catalyst, or the CO oxidation catalyst and the water trap are coated on a support (see col. 2, lines 53-60, col. 3, lines 14-19); and a HC trap disposed upstream of the water trap (see Figure 1, see col. 7, lines 9-10, 24-25). With regard to the water trap contributing to a rise in temperature of the CO oxidation catalyst, this is an inherent function of the condensation process. In order for water to condense it must be cooled, accordingly any condensation that occurred in the Frost device would release heat to the exhaust gas which is then flowed to the CO oxidation catalyst to raise the temperature of the CO oxidation catalyst.

Regarding claims 5, 6, Frost further discloses that the water trap and CO oxidation catalyst are disposed as layers or mixed to each other (see col. 3, lines 14-22).

Regarding claim 8, Frost further discloses that a secondary air supply unit is disposed upstream of the water trap (see Figure 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10- 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frost et al. (US Patent 5,776,417) in view of Mizuno et al. (US Patent 6,029,441).

Regarding claim 10, Frost discloses all the acclaimed limitations as discussed in claim 1 above, Frost further discloses a secondary air supply unit disposed upstream of the water trap (see Figure 9); however, fails to disclose that a HC trap is disposed upstream of the secondary air supply unit. Mizuno teaches that it is conventional in the art, to utilize a HC trap disposed upstream of the secondary air supply unit (see Figure 2; see col. 8, lines 51-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Mizuno in the Frost device since the use thereof would have removed the harmful unburnt hydrocarbon in the exhaust gas.

Regarding claims 11, 12, Frost discloses an exhaust emission control device of an internal combustion engine, comprising:

a water trap disposed upstream of and close to a low temperature light-off CO oxidation catalyst (see col. 2, lines 21-30), or the low temperature light-off CO oxidation catalyst and the water trap are coated on a support (see col. 3, lines 14-19);

a secondary air supply unit disposed upstream of the underfloor catalyst (see Figure 9); however, fails to disclose a HC trap disposed upstream of the secondary air supply unit. Mizuno teaches that it is conventional in the art, to utilize a HC trap disposed upstream of the secondary air supply unit (see Figure 2; see col. 8, lines 51-63).

It would have been obvious to one having ordinary skill in the art at the time the

invention was made, to have utilized the teaching of Mizuno in the Frost device since the use thereof would have removed the harmful unburnt hydrocarbon in the exhaust gas.

With regard to the water trap contributing to a rise in temperature of the CO oxidation catalyst, this is an inherent function of the condensation process. In order for water to condense it must be cooled, accordingly any condensation that occurred in the Frost device would release heat to the exhaust gas which is then flowed to the CO oxidation catalyst to raise the temperature of the CO oxidation catalyst.

Response to Arguments

Applicant's arguments filed 10/3/05 have been fully considered but they are not deemed persuasive. The Applicant argued that the limitation in the claim including "a water trap disposed upstream of and close to the CO oxidation catalyst so dimensioned that absorption heat and condensation heat of water contribute to a rise in temperature of the CO oxidation catalyst" is sufficiently clear and definite. The Examiner respectfully disagrees, since it is still not clear that at what point in a system would applicant consider the condensation of the water to contribute to a rise for temperature? μm or mm 's. It is the Examiner's position that Frost reference discloses that the water trap disposed upstream of the CO oxidation catalyst (see col. 2, lines 41-44, 52-55, col. 3, lines 14-21) are close enough such that the absorption heat and condensation heat of water contribute to a rise in temperature of the CO oxidation catalyst. Moreover, any heat supplied by the condensation process would add heat to the exhaust stream and thus would contribute to a rise in temperature of the CO oxidation catalyst.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (571) 272-4866. The examiner can normally be reached on Monday -Friday from 8:00 a.m.- 6:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about

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the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 800-786-9199 (toll-free).



Diem Tran
Patent Examiner
Art unit 3748

DT
December 16, 2005



THOMAS DENION
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